SUSTAINABILITY ENEWS

Creating the Solar Century in the Digital Age

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# THE 100% SOLAR SOLUTION:
## GREENEST BUILDING IN U.S. – A PLATINUM RATING

Los Angeles Audubon Solar Center

*Los Angeles*. In the ecosystem one creature's waste is another creature's food. Things are constantly being recycled and regenerated into the environment to create a natural delicate balance. The only external input is solar energy, the source of all life. The Los Angeles Audubon Center is an example of living in harmony with our natural environment. The Center is off the grid and is 100% powered by solar thermal and electric to operate all building systems including heating, cooling, lighting, computer, water pumps, and office equipment. The Center is a showcase of a "perfect solar marriage" of creative active and passive solar bio-climatic design to operate the 5,026 square foot nature center. The architects and planners have incorporated sustainable building materials for both the interior and exterior construction of the building. The building used recycled materials to create new applications and functional uses for cabinets, block walls, concrete post, trellis, etc. Except for water connection required for fire suppression, there are no sewer or gas connections to the building. The wastewater is treated and recycled to irrigate the 17-acre site. The design of the facility took into consideration both indoor and outdoor green building practices to qualify it for a Platinum U.S. Green Building Council's LEED (Leadership in Energy, Environmental Design) Green Building Rating.

The roofs of the building, the most undervalued and underutilized piece of real estate, now plays an important role of capturing the solar rays to provide power to the building as well as adding another layer of insulation to help reduce the air conditioning load by 20 percent. The 10-ton solar thermal absorption cooling system not only cools the building during the hot summer months, it also heats it during the cold winter days and provides hot water throughout the year. The solar thermal system is contributing up to 60 percent of the total energy load of the building. When compared to an electric compression type air conditioning system, the absorption cooling system uses 1/10$^{th}$ of the energy and displaces 15 kilowatts of peak load demand from the energy requirement.

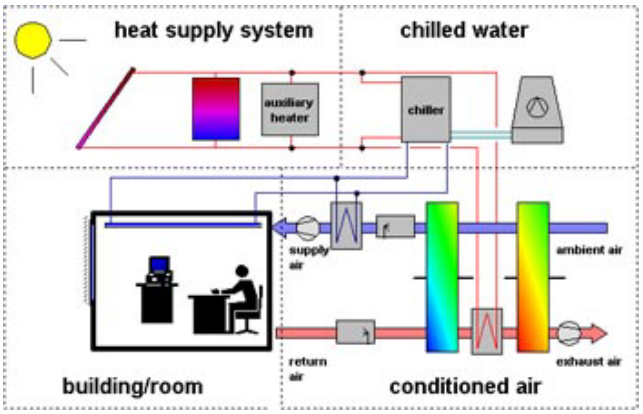

Diagram of a solar air conditioning system

The 25 kilowatt solar photovoltaic electric generating system provides 100% of the electrical power to operate the pumps, lighting, computer, and office equipment. More than 200 photovoltaic crystalline panels provide electricity and battery capacity for up to five winter days without direct sun.

The Audubon “Solar” Center is a major showcase for how solar energy can play an important role in our energy future by providing solutions to our energy crisis caused by excessive and sudden peak load demand to cool our offices, factories, and homes. The Center demonstrates that the production of solar energy coincides perfectly when the power demand is highest for air conditioning. In addition to an environmentally sensitive design building and “smart” appliances, the integration of onsite solar power generation, both solar thermal and electric, is a solution towards controlling our energy destiny and creating a sustainable future for generations to come.

For more information contact Les Hamasaki:.

The Green Technology Center, 4952 Coringa Drive, Los Angeles, CA 90042
Tel: 323.478.0426 / Cell: 323.350.5750 / email: info@sunutility.com / www.sunutility.com